

Afrotropical *Sylvia* Warblers

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The following text is reprinted (with minor edits for Bulletin style) from *Sylvia Warblers* by Hadoram Shirihai, Gabriel Gargallo and Andreas Helbig, illustrated by Alan Harris, and photographic editing by David Cottridge, with permission of the publishers, Christopher Helm, London. In the book, the product of over 15 years extensive museum and field research, the authors advocate the recognition of several new 'species' of *Sylvia*, based on a comprehensive review of morphology, vocalisations and DNA research of the genus. One of the most remarkable of their findings, though already suggested by previous genetic work, was that *Parisoma*, a genus near endemic to the African continent be subsumed within *Sylvia*. The extract that appears here includes the introduction to the Afrotropical *Sylvia*, the plates and photographs depicting the entire subgroup and the text dealing with Brown Sylvia *Sylvia lugens* (Brown Parisoma *Parisoma lugens* in *Birds of Africa*). A review of the work will appear in the next Bulletin.

Afrotropical (Arabian) *Sylvia* (former '*Parisoma*')

The systematic affinities and validity of the genus '*Parisoma*' (Swainson, 1832) have been highly controversial for decades (see discussions in Vaurie 1957, Erard *et al* 1997 and the introduction to this book). Our analysis of their morphology, behaviour, vocalizations and mitochondrial DNA sequences convincingly demonstrates that all five species should be subsumed within *Sylvia*. This matches the findings of Blondel *et al* (1996), based on DNA-DNA hybridization (two species), and the conclusions of Sibley & Ahlquist (1990), Sibley & Monroe (1990), Dowsett & Forbes-Watson (1993), Dowsett & Dowsett-Lemaire (1993) and Erard *et al* (1997).

The genus *Sylvia* is unusually divergent compared to other passerine genera and may, in the future, warrant division into several genera. However, if we wish to retain in this genus all species presently allocated to it, then the five '*Parisoma*' also demand inclusion, as otherwise *Sylvia* would not constitute a monophyletic group (i.e. it would not contain all descendants of its most recent common ancestor). The fact that we treat the former '*Parisoma*' species in a different format, and place them at the end of the book, does not indicate that they are closely interrelated, but simply reflects the very limited information available for these taxa.

The five '*Parisoma*' do not even constitute each other's closest relatives, but derive from two independent ancestors: Brown Sylvia and Yemen Warbler *Sylvia buryi* belong to the Orphean *S. bortensis*/Arabian Warbler *S. leucomelaena* group, while the other three species (*boehmei*, *layardi* and *subcaeruleum*) represent a separate clade without close relatives in the genus (although there is some indication that Barred Warbler *S. nisoria* may be their closest relative).

Afrotropical *Sylvia* possess several characters not observed elsewhere within the genus. Worthy of specific mention are, the black breast-band and bold white wing

pattern of *boehmei*, the unusual vocalizations of *buryi* and *boehmei*, the throat/upper-breast streaking of *subcaeruleum* and *layardi*, the buff/rufous vent of several species, and some behavioural peculiarities (e.g. bark-foraging in burying). Such attributes may create the impression that '*Parisoma*' are not *Sylvia*, but this is merely a result of our Eurocentric view of the genus. Species such as Blackcap *S. atricapilla* (black/rufous crown patch), Barred Warbler (subterminal feather markings and yellow iris) and the Dartford *S. undata*/Marmora's *S. sarda* group (long graduated tail) are equally 'unusual', when compared with the more closely related and species-rich Mediterranean group normally regarded as 'typical' *Sylvia*. Genetically, Blackcap and Garden Warbler *S. borin* are clearly more divergent from other *Sylvia* (and from each other) than are the five '*Parisoma*'.

In the light of this, the inclusion of '*Parisoma*' within *Sylvia* is unsurprising. This treatment will, of course, modify our view of the genus, and presents a challenge to ornithologists to study the '*Parisoma*' with a rigour equal that applied to many of the Eurasian taxa.

Brown Sylvia *Sylvia lugens*

Sylvia lugens Rüppell, 1840, *Neue Wirbelthiere Fauna Abyssinien*, Vögel, p.113; Simien—Abyssinia.

1 Introduction

General. Of the five Afrotropical *Sylvia*, formerly considered *Parisoma*, Brown Sylvia is most similar, in morphology and habits, to its Palearctic relatives. *S. lugens* is widespread, but patchily distributed, in E Africa, from Ethiopia south to Malawi, but is restricted to highland biomes, from c1,400 m to 3,700 m. Habitat preferences vary geographically and altitudinally, from open *Acacia* woodland to wooded moors and Afroalpine bushy areas. Apparently largely resident.

Systematics. Five subtly differentiated subspecies are recognised. They principally differ in upperparts ground colour, extent of underparts markings, and extent and intensity of buffish vent coloration. To a lesser extent, variation exists in the extent of white in the tail and throat feather tips.

S. l. lugens Rüppell, 1840—Ethiopian plateaux (except Bale Mts), probably to only 2,500 m.

S. l. griseiventris (Erard, 1978)—Bale Mts above 3,300 m.

S. l. jacksoni (Sharpe, 1899)—Sudan and Uganda (Didinga and Imatong Mts), Kenya, N Tanzania, Zaïre (Marungu Highlands) and Malaŵi.

S. l. clara (Meise, 1934)—restricted to Matengo Highlands (northeast of Lake Malaŵi); often synonymised with *jacksoni*.

S. l. prigoginei (Schouteden, 1952)—Zaïre, northwest of Lake Tanganyika and Itombwe Highlands.

2 Field Identification

Overall length: c13.5 cm; tail/wing ratio: c96; primary projection: approximately one-third of tertial length.

2.1 Characters

A small *Sylvia*, comparable in size to Sardinian Warbler *S. melanocephala*, with very uniform brownish and grey-brown plumage. Appears like a diminutive Yemen Warbler, but iris dark brown, not whitish. Proportionately short, rounded wings and long, deeply graduated, tail. Notably rounded head appears large. Mid-length, broad-based bill is pointed and slightly decurved. Thus, in proportions, it is most similar to *S. buryi*, although distinctly smaller. Predominantly brown plumage also recalls Yemen Warbler (but see below). Inconspicuous while foraging, well concealed in

canopy of flat-topped *Acacia* (gleaning insects), movements and behaviour much like other *Sylvia*. Main contact/alarm call is a harsh, nasal *zrrr*; given in a rapid series when excited. Unobtrusive; usually singly or in pairs, except when caring for fledged young.

2.2 Plumage variation

Limited seasonal and age-related variation; sexes virtually alike; slight geographical variation (see below). Following description refers to nominate.

Adult fresh (following post-nuptial moult)

Moulted remiges and rectrices very fresh; iris distinctively reddish sepia-brown (no olive). Entire upperparts almost uniformly dark earth/slate-brown, often tinged slightly paler/greyer, but crown, especially around eye and forehead, can be moderately darker (depending on light and angle of view) and merges gradually with rest of upperparts. Tail contrastingly blackish. Dark crown colour extends to ear-coverts (though these paler); lores as crown, or with some pale flecking. Wing usually as upperparts, but feathers have darker centres and paler narrow fringes. Tertials and alula almost uniform brown with thin, diffuse pale edges. Underparts clearly paler, largely cream buff-grey, but duskier brownish-grey on flanks and breast (which often appear faintly streaked). Chin and throat subtly mottled light and dark due to whitish-grey tips, thin dark brown subterminal bar and dark grey bases to feathers. Narrow belly patch whitish; rear flanks, vent and thighs tinged buffish-ochraceous. Undertail-coverts dark buffish-brown with diffusely demarcated, paler cream fringes. Tail has Lesser Whitethroat *S. curruca*-like pattern, with relatively large whitish-cream edges (cf other races). Outermost rectrix (r6) has almost entirely white outer vane and wedge-like tip (10–14 mm deep); r5 usually has white tip on both webs, but notably shallower in extent (as deep as 5–10 mm) and with no, or very thin, edge to outer web; r4–r3 similar, but progressively narrower tips, with no, or only c1 mm, whitish tip on r2; and r1 (innermost) is almost uniformly dark with paler diffuse edges. Underwing-coverts extensively tinged pinkish-buff. Eye-ring brown; orbital ring black. Bill almost entirely black. Tarsus dark slate-grey.

1st-winter (following post-juvenile moult)

Similar to adult, but iris olive-brown; partially yellow gape-flanges may still be visible. Retained juvenile remiges, rectrices and primary-coverts slightly more worn and fringed rufous. Retained juvenile rectrices have much reduced pale tips and edges, which are less white and more buffy. Overall, paler and more fulvous below, reminiscent of juvenile (which see).

Identification summary: Brown Sylvia *S. lugens*

Small, rather featureless, principally brown warbler. Similar to small Palearctic *Sylvia* in jizz. Frequents *Acacia* canopy in many areas. Sexes almost alike; age-related plumage variation very limited.

- Very dark warm brown above, with slightly darker crown and contrastingly black tail.
- Underparts paler, fulvous brownish-grey; chin/throat often mottled whitish.
- At close range, may have buff-rufous rear underparts, whitish mid-belly patch and, occasionally, impression of faint greyish breast streaking.
- Has variable, although usually prominent, whitish edges and tips to tail.
- Dark iris.
- Bill black and tarsus dark grey.
- Proportionately short winged and long tailed; moves restlessly, often waving raised tail.
- Contact call, nasal, pressed *zrrr*; alarm call, a harsh rattle *zrr-zrr-zrr*....

Pre-breeding ('spring birds')

1st-summerers probably retain a variable number of distinctive juvenile feathers that become progressively more worn and bleached, and have rustier fringes. Overall, plumage less bright.

Juvenile

Distinctive: typical loose, soft feathering, with upperparts, head and wing-feather fringes characteristically paler brown, washed rufous. Underparts paler and almost unpatterned, with buffish-cream suffusion, most intense on breast, flanks and vent. Lores often flecked whitish. Tail and bare parts as 1st-winter (see Fig 1).

2.3 Confusion species

No other *Sylvia* is easily confused with this species, as its combination of small size and overall brown coloration is virtually unique. Structure and plumage almost identical to Yemen Warbler. The latter, however, is well-separated geographically, distinctly larger and has a whitish iris.

3 Voice

Song. *S. l. griseiventris*. A full, short warble, slightly scratchy, surprisingly loud and full for the bird's size (Figs 2–3). Typical *Sylvia* quality, recalling Garden Warbler, but much shorter and deeper pitched. Most resembles Arabian Warbler. In Kenya, *S. l. jacksoni* song described as short (0.7 seconds), consisting of seven notes, beginning and ending abruptly: *p-r-s-z-choo-too-took*, ie very different from *griseiventris* in Ethiopia. Geographical variation in song remains unstudied, but may be substantial.

Calls. Common contact call is a nasal, pressed *zrrrr*, often given in short series. Alarm is a loud Sardinian Warbler-like harsh rattle *zrr-zrr-zrr-zrr-zrr-zrr-zrr* (Fig 4), consisting of a rapid series of elements (6.4–8.5 per second) similar to contact call. Rattle may also have a territorial function (like similar vocalisations in Barred and Sardinian Warblers), as often used in response to vocalisations of territory neighbours (ortape playback).

Practical use, seasonality. Song and rattling call important in locating birds, the species is otherwise hard

to find in dense tree canopy. Vocalisations carry quite far in open habitat. Song usually delivered from inside cover. Seasonality poorly documented, but in September/October (after breeding season), on Bale Mts, there was very little spontaneous song (subsong) and little response to playback. Rattling call given year-round.

4 Subspecies Taxonomy

4.1 Subspecies recognition

Five races, although perhaps not all warrant recognition. The following account is based on Erard (1978), material (all subspecies) in BMNH and MNHN (Paris), and personal field experience with nominate *lugens* and *griseiventris* from both sides of the Ethiopian Rift Valley. Subspecific separation is best evaluated by studying underparts coloration, especially the amount of buff/rufous on the vent, the amount of white in tail and, to a lesser extent, size. However, subspecific identification is often complicated by individual variation, inconsistency of characters and frequent intermediates. Further study is warranted.

***S. l. lugens*.** This Ethiopian form is characteristically dark, richly coloured and patterned, and small.

[Nomenclature and type-locality: *Sylvia (curruca) lugens* Rüppell, 1804, *Neue Wirbelthiere Fauna Abyssinien*, Vögel, p.133, pl.42, fig 2, labelled *Curruca (Sylvia) lugens*—Simien Province, Abyssinia. Designation relies on dark upperparts, even darker crown, rufous lower abdomen, well-marked white flecking on chin, throat, and whiter tail tips and edges; apparently the smallest race, although few morphometric data are available.]

♂♂/♀♀ Upperparts typically dark and deep sepia-brown, almost always with darker crown. Rear flanks and vent extensively warm ochraceous and buff; throat and chin feathers tipped whitish-grey, thus presenting marked mottled appearance; breast usually more markedly streaked (but still faint and variable). Whitish area on outer tail feathers appears more extensive than in other races (see description above and Fig 1).

***S. l. griseiventris*.** Endemic to Bale Mts, Ethiopia. Compared with nominate, has characteristically more uniform upperparts, paler, featureless underparts and less white in tail; also larger than nominate.

[Nomenclature and type-locality: *Parisoma lugens griseiventris* Erard, 1978, *Bull. Brit. Orn. Club*, 98, p.46—Dinsho (= Gurie), Bale, Ethiopia. Designation relies on uniformly very dark upperparts, featureless underparts, with strongly reduced rufous on lower abdomen and even less white in outer tail feathers; also larger than nominate, with wing length of three males 64–66, mean 65.3, and tail 61–64.5, mean 62.5 (Erard 1978).]

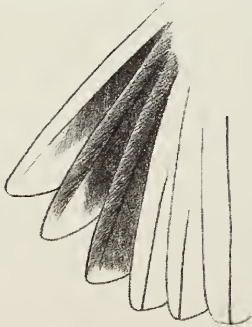


Figure 1 Tail pattern of adult Brown *Sylvia*.



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1 Brown Sylvia *S. lugens lugens*, **probably imm. male autumn**, Western Highlands, west Ethiopia, September 1997 (H. Shirihai). Rather long tail, dark warm brown upperparts with darker crown, ear-coverts and blackish tail. Reddish sepia-brown iris and moult pattern suggest a 2nd-year. Very worn juv. unmoulted primaries, secondaries and primary-coverts, as well as three outermost greater coverts. Only the seven innermost greater coverts and two smaller tertials were replaced during previous post-juv. moult (the fresh, largest, tertial was replaced later in the non-breeding season). **2-3 Yemen Warbler** *S. buryi*, **probably 1st-winter, autumn**, Saudi Arabia, November 1994 (S. Aspinall). Pale iris, dark brown upperparts, dusky underparts and pale unstreaked throat are distinctive characters of this species. Rather worn tail suggests a 1st-winter with retained juv. rectrices. **4-5 Chestnut-vented Warbler** *S. subcaeruleum*, **ad. summer**, Nylsvley, South Africa, August 1996 (W. Tarboton/VIREO). Greyish overall impression and diagnostic chestnut rear vent and undertail-coverts characteristic of this species. Very fresh overall plumage condition and cream-white iris distinctive of ad.

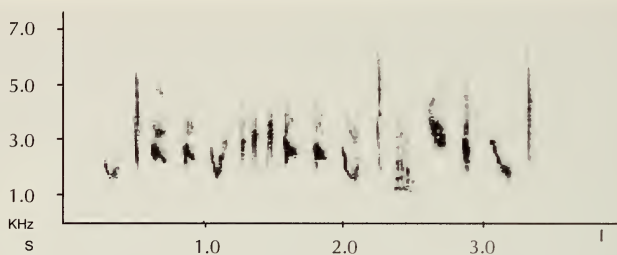


Figure 2 Song, *S. l. griseiventris*. A. J. Helbig, Goba, Bale Mts, 3,400 m, Ethiopia, October 1999. Sonogram: Annett Kocum.

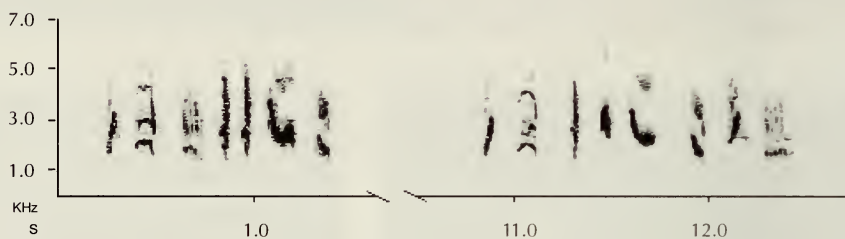


Figure 3 Short song (two strophes), *S. l. griseiventris*. A. J. Helbig, Goba, Bale Mts, 3,400 m, Ethiopia, October, 1999. Sonogram: Annett Kocum.

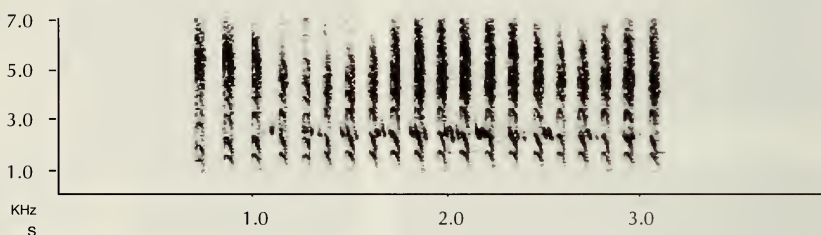
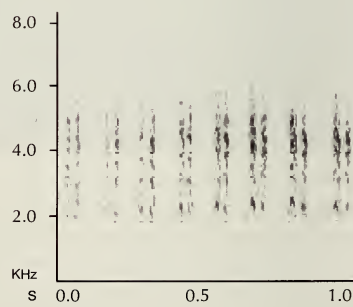
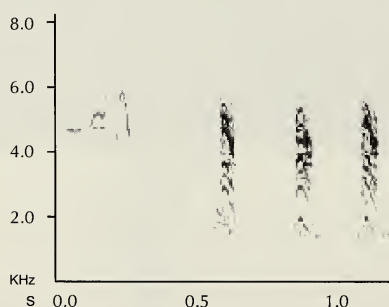


Figure 4 Alarm call (rattle), *S. l. griseiventris*. A. J. Helbig, Goba, Bale Mts, 3,400 m, Ethiopia, October 1999. Sonogram: Annett Kocum.



Figures 5 and 6 Calls, *I. Sinclair*, Ethiopia, December 1995.

♂♂/♀♀ Mantle darker and concolorous with crown, in some blackish sepia-brown. Chin and throat only slightly tipped/flecked whitish; thus entire throat appears darker than in nominate. Rest of underparts paler and tinged greyer, with reduced streaking, and darker body-sides and breast. Virtually lacks rufous coloration on vent, imparting more uniform and unpatterned impression to underparts. Tail feathers usually have considerably reduced pale edges and tips, which are also greyer and more diffusely delimited.

S. l. jacksoni. The most widespread form (Sudan and Kenya south to Malawi and Zaïre) combines characters of both preceding races, but is paler throughout.

[Nomenclature and type-locality: *Parisoma jacksoni* Sharpe, 1899, *Bull. Brit. Orn. Club*, 10, p.28—Mt Elgon. Designation relies on paler, more uniform and greyer upperparts than nominate, and paler abdomen, lacking warm ochraceous wash to vent of nominate; also larger, five males from Mt Elgon had wing 64–67 and tail 58–65 (Erard *et al* 1997).]

♂♂/♀♀ Upperparts usually slightly paler brown and suffused more greyish than nominate, from which also differs in lacking darker, contrasting crown, and paler and indistinctly patterned underparts (described for *griseiventris*, which see). Throat as heavily tipped whitish as nominate. Tail as nominate, with relatively more extensive whitish edges and tips. Differs from *griseiventris* in being noticeably paler above and more strongly patterned, with white throat flecking and larger pale edges to rectrices.

S. l. clara. This Tanzanian form is virtually indistinguishable from *jacksoni*, but is usually browner overall.

[Nomenclature and type-locality: *Parisoma lugens clara* Meise, 1934, *Orn. Monatsber.*, 42, p.16—Mahuka, northwest of Lipumba, Matengo Highlands, Tanganyika; above 1,500 m. Designation relies on being darker throated than similar *jacksoni*; in size the type-specimen had wing 64, culmen 10, tail 61 and total length 144 (Meise 1934).]

♂♂/♀♀ In side-by-side comparison of skins, the only consistent character to separate this form from *jacksoni* is the almost uniform brown throat feathers, lacking white tips/flecking, and thus presenting a dark-throated impression. Dark brown coloration is often extensive on breast and flanks. Also differs from *jacksoni*, but approaches nominate, in darker mantle and even darker crown. Tail pattern as nominate and *jacksoni*.

S. l. prigoginei. This Zaïrean form shares characters of other races, but has a distinctive olive wash to the upperparts. Also deeper and more extensively rufous below, and apparently the largest race.

[Nomenclature and type-locality: *Parisoma lugens prigoginei* Schouteden, 1952, *Rev. Zool. Bot. Afr.*, 46, p.171—

Lake Lungwe, north-west of Lake Tanganyika, Kivu, Belgian Congo. Recognition based on olive-tinged (and darker) upperparts, warmest buff/rufous vent and apparently the largest race; two males had wings 68, 69.5 and tail 60, 63 (Erard 1978).]

♂♂/♀♀ Dark above, with blacker crown as nominate, but mantle/scapulars often extensively tinged olive-brown. Characteristically strongly patterned underparts: chin solidly dark, throat extensively flecked whitish, breast markedly darker, belly patch whitish, and lower flanks and vent extensively tinged warm ochraceous. Tail has reduced pale area.

4.2 Discussion of geographical variation

Geographical variation is probably the result of allopatric isolation of discrete highland populations, both within and outside the Rift Valley system. Nominate *lugens* (Ethiopia) and *jacksoni* (SE Sudan to Kenya and Malawi) are principally distributed within the Rift Valley and surrounding areas, but neither usually ascends above 2,500 m. The nominate, which is the darker, more warmly coloured subspecies of the two, inhabits humid, lightly wooded savannas, while *jacksoni*, the paler and greyer form, frequents drier habitats. Larger and darker races, adapted to higher altitudes, have evolved in isolated ranges such as the Bale Mts (*griseiventris*), Matengo Highlands (*clara*) and Itombwe Highlands (*prigoginei*). Erard (1978) provides an excellent example of isolation through altitudinal adaptation in *griseiventris*, which breeds above 3,300 m and is separated altitudinally from the nominate. A dense forest belt separates the two taxa. Nominate in the W Ethiopian Highlands is quite divergent from *jacksoni* (Tanzania) in mitochondrial DNA (2.5%, cytochrome *b* gene; Helbig *et al* submitted) and apparently vocally (see above).

5 Moults, age and sex

5.1 Moults

Moult strategy/general timing

Post-juvenile moult partial, involving entire body plumage, median and lesser wing-coverts, all or part of the greater coverts, tertials and rectrices, and often including some innermost secondaries. Timing largely unknown (recorded in November).

Post-nuptial moult apparently always complete; timing unknown.

Detailed description of moult

No published information available. The following is based on a very small sample studied in BMNH. Two in active post-juvenile moult were examined, both from 9 November (Ethiopia). One had replaced most body feathers



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1 Layard's Warbler *S. layardi*, Karooport, Cape Province, South Africa (A. Greensmith). Readily separated from all other Sylvia by its overall greyish impression and pale iris colour. **2-3 Banded Sylvia** *S. boehmi*, ad. male autumn, 22 km south of Filtu, south-east Ethiopia, September 1997 (H. Shirihai). Unmistakable. Distinctive greyish head, blackish breast-band and rufescent orange undertail-coverts. Whitish iris distinctive of ads. **4-5 Banded Sylvia** *S. boehmi*, 1st-summer, south Ethiopia, October 1999 (H. Shirihai). Note distinctive moult limit between innermost ad.-like greater coverts and unmoulted juv. outermost coverts, which are distinctly paler brown and lack bold white fringes and tips. Whitish iris unreliable for ageing in spring/summer.

and all median and lesser wing-coverts; the three innermost greater coverts were fully grown, while the two adjacent, outer, feathers were almost grown and the innermost tertial was half-grown; all others were unmoulted. The other had replaced all body feathers, median and lesser wing-coverts, the five innermost greater coverts were fully grown and the other three coverts growing; rest of plumage unmoulted. Two that had completed post-juvenile moult had replaced all body feathers, median and lesser wing-coverts, one also having replaced all greater coverts and tertials, as well as the two innermost secondaries, the entire alula and the carpal-covert (tail also apparently completely renewed); the other had renewed only the five innermost greater coverts and central tertial.

Adults undertake a complete post-nuptial moult but none in active moult was checked. Timing unknown.

5.2 Ageing

Juvenile

Distinct. Entire plumage fresh with distinctly soft, fluffy body feathers. Underparts paler than adult and extensively washed buffish-cream, mostly on body-sides and rear

vent. Iris mostly olive-brown. Rectrices have more diffuse and less pure white edges and tips than adult.

Spring (following post-nuptial and post-juvenile moults)

Ad. All flight feathers of same generation, very fresh just after moult, becoming moderately worn with time. Remiges and primary-coverts centred blackish and fringed grey. Rectrices have pure white edges and tips. Iris reddish sepia-brown.

1st-winter/summer. Juvenile primary-coverts not so firmly textured as adult feathers, less blackish and have rufous-brown fringes when fresh. Some have a distinct moult limit among outer greater coverts: innermost adult-like feathers centred blackish-grey, while unmoulted juvenile outermost ones are clearly softer in texture and rather paler and browner. Those that replaced all greater coverts show a distinct moult limit on the inner remiges: innermost moulted feathers (usually tertials) are clearly darker with greyish fringes, while outer juvenile ones are browner with rufous-brown fringes. Unmoulted juvenile rectrices (if any) have less pure white and diffuse edges and tips. Iris colour mostly olive-brown; however, as period taken to attain adult coloration is unknown, iris



Figure 7 Range of *Brown Sylvia* with subspecies *lugens* (1), *griseiventris* (2), *jacksoni* (3), *prigoginei* (4) and *clara* (5).

colour is best used as a supporting criterion and with caution, especially following post-juvenile moult.

5.3 Sexing

♂ ♀ Sexes alike.

6 General biology and ecology

6.1 Distribution

Breeding. Endemic resident to E Africa, occurs disjunctly in Rift Valley highlands, from Ethiopia to Malawi; also SW Kenya. Even within range, its distribution is fragmented with no obvious ecological correlates, as similar *Acacia* habitat and rainfall regimes occur elsewhere in E Africa. *S. l. lugens* is the most widespread and, apparently, commonest subspecies, occurring in several provinces of EC Ethiopia (north-west of Rift Valley), at 1,600–2,100 m, and southeast of Rift Valley at lower altitudes around Bale Mts. *S. l. griseiventris* represents an isolated high-altitude population in the Bale Mts, S Ethiopia, at 3,300–3,700 m. *S. l. jacksoni* occurs within 500 mm rainfall zone of S Sudan, N and SE Uganda, SW Kenya (1,400–2,500 m) and, locally, in adjacent N Tanzania (Crater Highlands). Other isolated populations occur in E Zaïre, at Itombwe (*prigoginei*; rare at 2,620–3,220 m), and in the Marunga (uncommon at 1,840–2,020 m) and Matengo Highlands, S Tanzania (*clara*), the western slopes of the Nyika Plateau, N Malawi/NE Zambia (very local at 1,400–1,850 m) and S Malawi (Chongoni to Tambo).

Winter. As breeding range.

6.2 Migration and other movements

Resident. Juvenile dispersal; some altitudinal movements are to be expected in montane populations.

6.3 Habitat and ecology

Highland *Acacia* woodland and bushy habitats. In Ethiopia, it frequents olive–juniper–*Podocarpus* forest and lightly wooded savanna with *Acacia* and other bushes; also gallery forest with *Acacia* and *Ficus*. In Bale Mts subalpine zone (3,400–3,500 m; above Goba), occurs near tree-line in very open, heavily grazed *Hypericum revolutum* woodland (up to 8 m tall) with dense *Euphorbia* scrub. Wanders—only in post-breeding season (?)—to alpine scrub (*Alchemilla*, *Helicbrysum cusbions* etc) with tree-like Ericaceae (HS pers obs, September 1997). In Kenya, it is commonest, in and near the Rift Valley, where rich stands of *Acacia abyssinica* and *A. xanthophloea* occur.

Ecological relationships with other species. Limited information from *Hypericum* woodland in Bale Mts. Ecologically most similar species are Montane White-eye *Zosterops poliogaster* and, to lesser extent,

Brown Woodland Warbler *Phylloscopus umbrovirens*. Both forage in same vegetation strata as *S. lugens*, but are smaller and preferentially use more peripheral parts of tree canopy (white-eyes often visit flowers), have smaller bills and do not rip off flakes of bark or dead leaves. No aggressive interactions noted.

6.4 Diet

Small arthropods, mostly insects including beetles, aphids and caterpillars of Lepidoptera, and many spiders. Most prey items are minute, but opportunistically takes caterpillars up to five times its bill length, which are battered against perch and squeezed with bill to remove gut contents. Also takes an unknown proportion of berries.

6.5 Behaviour and breeding biology

General habits, foraging behaviour. Unobtrusive. Occupies distinctive foraging niche in canopy of *Acacia*, *Hypericum* and tree-heaths, spending long periods in same tree. In stunted growth at high elevations it forages to ground level, but at lower altitudes strictly remains in canopy. Systematically searches vegetation by short, regular hops, scouring for food after each hop, and gleaning prey from surface or from beneath live or dead leaves, dried flowers (*Hypericum*) or, quite frequently, from lichens and bark on thick branches and trunks. Will remove pieces of bark to expose concealed prey (as does *S. buryi*), but never hammers with bill as tits do. The only tit-like action is its frequent clinging to trunk and large branches in various positions. Prefers particularly dense clumps of branches, slipping efficiently through near-impenetrable tangles. Also on and around tree trunk, rarely outside canopy.

Social organisation. Usually in pairs year-round, or in family groups for short period after breeding. Probably monogamous. Home ranges of several pairs may overlap outside breeding season, permitting relatively high densities (e.g. 4–5 pairs in 5 ha of *Hypericum* woodland, Bale Mts, October 1999). Pair members often forage in same tree.

Breeding biology. Nest is a shallow cup constructed of moss, rootlets and other plant material, lined with grass and bark-fibre, usually placed in a tree. Two distinct breeding seasons apparent in some parts of range (Kenya: April–May, December; Malawi: May, October–November; Erard *et al.* 1997). *S. l. griseiventris* in Bale Mts (Ethiopia) seen with fledged young in September (HS). Clutch size two eggs. No further information.

Mortality, longevity. No information.

7 Population size and trends

Locally common in Ethiopia, uncommon in Kenya and N Tanzania, and uncommon to rare elsewhere. No information on overall sizes of the disjunct populations.

8 Appendix

Table 1. Summary of published data for Brown Sylvia *Sylvia lugens*. The following data are presented: the taxon (as given or inferred from the original source, and thus not necessarily limited to valid races; see 'Subspecies taxonomy'), geographic origin, age (Juv. = immature; Ad. = adult), sex, mean $\pm$ standard deviation, range, sample size, bird state (Li = live birds, Sk = skin) and reference source. Where sex/age is not indicated, the dataset contains information relating to all/several age/sex categories, or this information is not presented in the relevant source.

WING							
<i>lugens</i>		♂ ♂	62.0	61.0–63.5	n=3	Sk	Erard et al 1997
<i>lugens</i>		♀ ♀	62.0	60.5–64.0	n=8	Sk	Erard et al 1997
<i>griseiventris</i>		♂ ♂	65.3	64.0–66.0	n=3	Sk	Erard et al 1997
<i>griseiventris</i>		♀ ♀	63.5		n=1	Sk	Erard et al 1997
<i>prigoginei</i>				66.0–72.0	n=8	Sk	Erard et al 1997
<i>jacksoni</i>	Mt Elgon	♂ ♂		64.0–67.0	n=5	Sk	Erard et al 1997
<i>jacksoni</i>	Mt Elgon	♀ ♀	64.0		n=1	Sk	Erard et al 1997
TAIL							
<i>lugens</i>		♂ ♂	57.2	56.5–58.0	n=3	Sk	Erard et al 1997
<i>lugens</i>		♀ ♀	58.4	57.0–61.0	n=8	Sk	Erard et al 1997
<i>griseiventris</i>		♂ ♂	62.5	61.0–64.5	n=3	Sk	Erard et al 1997
<i>griseiventris</i>			62.0		n=1	Sk	Erard et al 1997
<i>prigoginei</i>				62.0–67.0	n=8	Sk	Erard et al 1997
<i>jacksoni</i>	Mt Elgon	♂ ♂		58.0–65.0	n=5	Sk	Erard et al 1997
<i>jacksoni</i>	Mt Elgon	♀ ♀	58.0		n=1	Sk	Erard et al 1997
TARSUS							
<i>jacksoni</i>	Mt Elgon	♂ ♂		20.0–21.5	n=5	Sk	Erard et al 1997
<i>jacksoni</i>	Mt Elgon	♀ ♀	22.5		n=1	Sk	Erard et al 1997
BILL							
<i>lugens</i>		♂ ♂	11.7	11.5–12.0	n=3	Sk	Erard et al 1997
<i>lugens</i>		♀ ♀	11.9	11.5–12.5	n=8	Sk	Erard et al 1997
<i>griseiventris</i>		♂ ♂	12.3	12.0–12.5	n=3	Sk	Erard et al 1997
<i>griseiventris</i>		♀ ♀	12.0		n=1	Sk	Erard et al 1997
<i>jacksoni</i>	Mt Elgon	♂ ♂		10.0–11.5	n=5	Sk	Erard et al 1997
<i>jacksoni</i>	Mt Elgon	♀ ♀	11.0		n=1	Sk	Erard et al 1997

References

Blondel, J., Catzeflis, F. and Perret, P. 1996. Molecular phylogeny and the historical biogeography of the warblers of the genus *Sylvia* (Aves). *J. Evol. Biol.* 9: 871–891.

Dowsett, R.J. and Forbes-Watson, A.D. 1993. *Checklist of the Birds of the Afrotropical and Malagasy Regions*. Tauraco Research Report 4. Liège: Tauraco Press.

Dowsett, R.J. and Dowsett-Lemaire, F. 1993. *A Contribution to the Distribution and Taxonomy of Afrotropical and Malagasy Birds*. Tauraco Research Report 5. Liège: Tauraco Press.

Erard, C. 1978. A new race of *Parisoma lugens* from the highlands of Bale, Ethiopia. *Bull. Br. Ornithol. Cl.* 98: 43–49.

Erard, C., Fry, C.H., Grimes, L.G., Irwin, M.P.S., Keith, S., Lack, P.C., Pearson, D.J. and Tye, A. 1997. *Sylviidae*. In: Urban, E.K., Fry, C.H. and Keith, S. (eds) *The Birds of Africa*. Vol 5. London, UK; Academic Press.

Helbig, A.J., Seibold, I. and Shirihai, H. submitted. Phylogeny and evolution of the genus *Sylvia*: 1. Evidence from mitochondrial DNA sequences. *Ibis*.

Sibley, C.G. and Ahlquist, J.E. 1990. *Phylogeny and Classification of Birds*. New Haven & London, UK: Yale University Press.

Sibley, C.G. and Monroe, B.L. 1990. *Distribution and Taxonomy of Birds of the World*. New Haven & London, UK: Yale University Press.

Vaurie, C. 1957. Notes on the genus *Parisoma* and on the juvenal plumage and systematic position of *Parisoma plumbeum*. *Ibis* 99: 120–122.



Afrotropical *Sylvia* warblers

Chestnut-vented Warbler *S. subcaeruleum*

A medium-sized *Sylvia* with a rather long tail and short, rounded wings. Prominent black and white alula, and a faint whitish outer wing-panel. Largely brownish dark slate-grey above, dusky-grey or whitish below, with prominent and well-defined blackish streaking on throat; diagnostic chestnut rear vent and undertail-coverts. Tail has large white edges and tips. Juv. tinged buffish below, with only a slightly streaked throat and duller, buffy rear vent. Legs dark grey. Iris whitish in ad. and dark-olive in 1st-winters. Orbital ring blackish and eye-ring greyish.

1 Ad. Nominate race (from Cape area and SW Orange Free State). Darkish overall with distinctive blackish speckled throat, and chestnut rear vent and undertail-coverts.

2 Ad. Race *ansorgei* (Angola). As nominate but whiter below.

Banded Sylvia *S. boehmi*

Small *Sylvia* with large head and long tail. Very distinctive, with greyish head, blackish breast-band and rufescent orange rear flanks and undertail-coverts. Largely greyish above with prominent well-defined whitish tertial fringes and whitish double wing-covert bar. Tail has large white edges and tips. Juv. browner above, with virtually no blackish breast-band; below buffier with paler rufous-orange rear flanks and undertail-coverts. Legs dark grey. Iris whitish in ad. and dark grey-brown in 1st-winters. Orbital ring blackish and eye-ring whitish.

3 Ad. Distinctive blackish breast-band, whitish wing-panel and double wingbar, and rufescent/orange rear flanks and undertail-coverts.

Layard's Warbler *S. layardi*

Medium-sized *Sylvia* with rather short wings and long tail. Largely dark slate-grey above, with characteristic black and white alula patch, and faint whitish outer wing-panel. Below, dusky with dark streaking on throat and upper breast. Has typical *Sylvia*-like tail pattern. Juv. almost or entirely lacks the characteristic throat streaking. Iris mainly

greyish-yellow. Rectrices have more diffuse and less pure white edges and tips, compared with ad.-like feathers. Legs dark grey. Iris whitish in ad., darker and greyer in 1st-winters. Orbital ring blackish and eye-ring dark grey.

4 Ad. Overall darkish, with conspicuous alula pattern and dark-streaked throat and upper breast.

Yemen Warbler *S. buryi*

Rather large, with short wings, long tail and long, slightly curved bill. Dark brown above, with dusky grey-brown mantle, and darker and rustier crown. Below warm, with rufous-brown rear vent and undertail-coverts. Tail indistinctly patterned with diffuse pale edges and tips. Juv. browner above and has reduced dark crown contrast; below profusely washed pale buff-grey. Rectrices have reduced and more greyish-buff edges and tips compared with ad. Legs dark grey. Iris whitish in ad. and dark brown in 1st-winters. Orbital ring blackish and eye-ring brownish.

5 Ad. Overall darkish brown, with paler throat, pale eye and warm underparts.

Brown Sylvia *S. lugens*

Smallish, with moderately long tail and short wing, rather similar to some Palearctic *Sylvia* in structure. Dark warm brown above, with slightly darker crown and contrasting black tail. Below, paler brownish-grey, paler chin and throat often flecked darkish. Rear underparts buff-rufous. Obvious whitish edges and tips to tail. Juv. profusely washed buffish-cream below. Iris mainly olive-brown. Rectrices have more diffuse and less pure white edges and tips compared with ad.-like feathers. Legs dark grey. Iris reddish sepia-brown in ad., olive-brown in 1st-winters. Orbital ring blackish, eye-ring brownish.

6 Ad. Nominate race (Ethiopian plateaux except Bale highlands). Overall darkish brown, with paler throat streaked darker grey.

7 Ad. Race *jacksoni* (Sudan south to N Tanzania, Zaïre and Malawi). Compared with nominate lacks darker, contrasting crown and has slightly paler and greyer upperparts. Greyish-buff instead of pinkish-buff on rear underparts. 